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TECHNICAL MEMORANDUM

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STORM DRAIN VIDEO SURVEY NSA MEMPHIS

1D-00600

The storm drains at Naval Support Activity Memphis were videotaped November 6 and 7, 1995, to identify potential contamination leaks for later investigation.

Equipment used during the survey included remote control cameras, video tape recorders, and video and audio dubbers. The subcontractor — Insituform Mid-South — brought two cameras to videotape the lines. The first camera could view the complete circumference of the pipeline, but it malfunctioned early in the survey, so the second camera was used to finish the work. Although the second camera could remotely view the pipeline's total circumference, it could not scan the circumference and zoom in on points of interest.

The quality of the videotaped material from the second camera was sufficient for detecting flaws in the pipeline. Rocks and other debris sometimes prevented the camera from being operated by remote control. When this occurred, the next downstream manhole or grate was opened, the line was sent back to the camera, and the camera was pulled through the pipe.

Weather conditions on November 6 were favorable, so most of the lines were videotaped. However, on November 7, rain during the day filled the lines to the point that the camera's movement was hampered. The amount of water in the lines during the rainfall did not block the view of the bottoms of the lines. However, any major breaks in the line also would have been seen on the sides, and possibly the top, of the line. Despite the rain, all lines were surveyed, and the videotape's quality was sufficient for detecting pipeline flaws.

All manholes and drain grates were numbered to help determine areas requiring further investigation. A map has been prepared illustrating this numbering sequence, as well as a log describing all lines surveyed and the findings between manholes/drain grates. From the accompanying log it can be seen that areas of concern exist near Building N-6 and the lines running from N-4 (manholes 1, 2, 3, and 4). A line collapse between manhole 4 and Building

N-6 prevented further taping up to that facility. No major flaws in the pipeline were found other than those described above.

According to Insituform personnel, all lines appear in very good condition given their age.

NSA MEMPHIS

STORM DRAIN SURVEY LOG

From Manhole No.	To Manhole No.	Comments
4	3	Line clean and OK
3	2	First joint from MH2 (4 ft) is leaking
2	1	First joint from MH1 (4 ft) is cracked, 16 ft from MH1 has a bad joint seal
4	Bldg. N6	Line collapsed approximately 60 ft from MH4
4	5	Hole in pipe 60 ft from MH4, joint leak 85 ft from MH4, broken pipe 135 ft from MH4
5	6	Line OK, some debris (rocks) 20 ft from MH6
7	mainline	Line clean and OK
5	8	Line dirty but OK
8	9	Line dirty but OK
9	10	Line dirty but OK
11	9	Line dirty, unable to videotape
12	13	Large hole 8 ft from MH12
13	14	Line clean and OK
14	15	Line dirty but OK, unable to get past 45° bend
15	14	Line dirty but OK
15	16	Line clean and OK
16	17	Line clean and OK
17	18	Line OK, unable to videotape farther due to a board in the line
18	17	Line OK, video taped back to board in line
18	19	Line clean and OK
19	pipe turn	Rocks in line 120 ft from MH19, line otherwise OK
20	21	Line clean and OK

From Manhole No.	To Manhole No.	Comments
21	22	Line clean and OK
22	23	Water level in pipe is high, line is OK
25	26	Line clean and OK, unable to videotape 6 joints past MH26 due to cable length
26	25	Videotaped back to MH25, line clean and OK
26	27	Line clean and OK
29	19	Line OK, some rocks in bottom
30A	30	Line clean and OK
30	31	Line clean and OK
31	33	Line clean and OK
32	31	Line clean and OK
6	34	Line clean and OK
34	29	Line clean and OK
29	35	Line clean and OK
35	36	Large rocks in line, unable to videotape
36	37	Line clean and OK
37	38	Line clean and OK
38	28	Line clean and OK
28	33	Line clean and OK